

METHOD TO IMPROVE ATSC-VSB TRANSCEIVER PERFORMANCE
EMPLOYING A TIME-FREQUENCY WAVEFORM PROCESSOR

ABSTRACT OF THE DISCLOSURE

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A backward compatible enhancement to ATSC-VSB transmissions is provided to enable intra-field channel estimation for better channel equalization. One or more time-frequency waveforms are inserted into the transmitted signal with systematic time and frequency variation synchronized to the currently available field sync. A coherent demodulator may then directly estimate the channel frequency response. The power of the inserted waveform(s) is small compared to the existing 8-VSB signal, such that existing receivers will function as intended with only minimal degradation of performance.